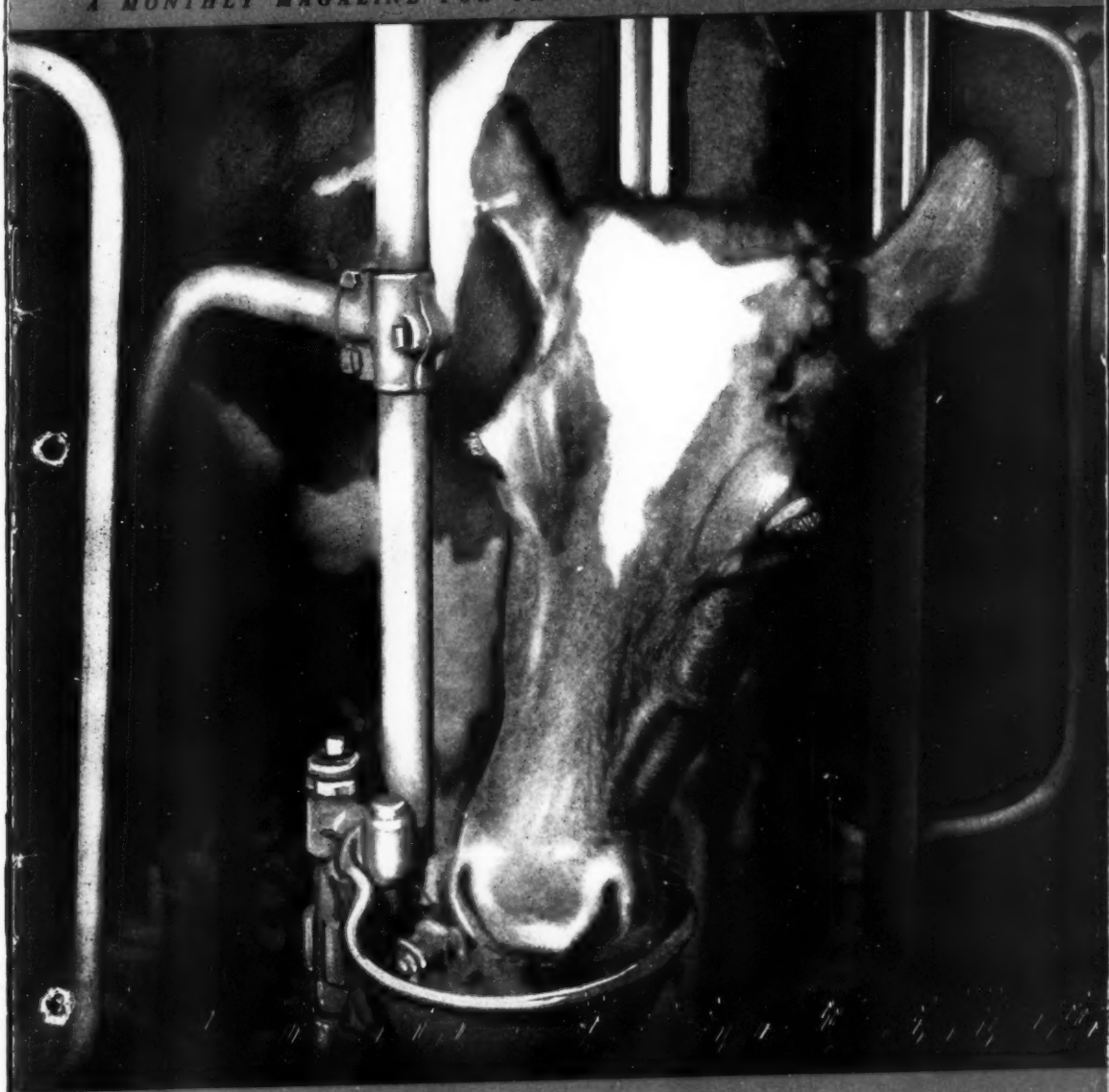
Electricity on the Farm

LIBRARY
SCHOOL OF AGRICULTURE
EXPERIMENT STATION
PENNSYLVANIA STATE COLLEGE
STATE COLLEGE, PA

A MONTHLY MAGAZINE FOR THE UP-TO-DATE RURAL FAMILY



10 CASH PRIZES will be awarded for the best titles for the above picture. *(See inside back cover for rules)*

SEPTEMBER
1936

EVERY HOUSE NEEDS WESTINGHOUSE

● Not all the heavy labor is done outside at harvest time. In the kitchen, work piles up, too. Bigger meals must be prepared. More mouths must be fed. But it's no problem in the farm home equipped with a Westinghouse Electric Range like that pictured on this page. This modern range has two ovens. A large roast may be cooked in one oven with automatically controlled time and temperature while pies are baked with even temperature in the other. As a result, more time is available for the many other tasks in the home. The coolness and cleanliness of electricity will also please you.

GREATER COOKING ECONOMY, TOO

A new cooking unit, the sensational "Economizer," now makes it possible to save 18% in monthly electric cooking costs. Savings such as this are assured because this amazing Westinghouse invention uses only 1/10 the electricity on "low" heat as it does on "high." In comparison, the "low" on ordinary units uses ¼ the electricity required by "high." But — get the complete story of *all* the Westinghouse features.

SEND FOR THIS BOOK

Pictures and describes all the modern Westinghouse conveniences: Lighted ovens, automatic roasting and baking controls, thick insulation, sliding oven shelves, and many others. All models pictured. Many savings explained. Prices now lowest in history. Write for this book. Address Westinghouse Electric & Mfg. Co., Dept. E. F., Mansfield, Ohio, or see your electric company.

Westinghouse

GOLDEN JUBILEE ELECTRIC RANGES

WESTINGHOUSE W GOLDEN JUBILEE

For low cost dependable SERVICE

Goulds CID Water Supply System for shallow wells.

CHOOSE A GOULDS *CID* WATER SUPPLY SYSTEM

Goulds CID Water Supply System for deep wells.

In the long run what you pay for pumping counts far more than what you pay for a pump. That's why it's important to choose a pump that is designed and built for long, trouble-free service—a pump that will be on the job year in and year out without shut-downs for adjustments and repairs.

Since 1848 the name GOULDS on pumps and water supply systems has been a guarantee of unequalled quality . . . of extra strength in every part . . . of fine materials and careful workmanship. Today there is a Goulds CID Water Supply System to meet every capacity requirement. A minimum of moving parts, protected by automatic lubrication, eliminates wear and costly servicing. Automatic operation assures an unfailing supply of clean, clear water—available when and where you want it at the turn of a faucet—from either deep or shallow wells.

Running water in the home, barn and garden costs but little and no other investment will bring so much in added health and comfort . . . in larger profit from live stock, poultry and crops.

BUY NOW . . . . BUY THE BEST . . . . BUY GOULDS

GOULDS

RUNNING WATER

GOULDS PUMPS, Inc.
340 Fall Street
Seneca Falls, N. Y.

Please send me information on Goulds CID Water Supply Systems for ☐ Shallow Wells . . . ☐ Deep Wells.

Name .....

Place ..... R.F.D. ..... State .....

6394

September, 1936

Electricity on the Farm

Vol. 9, No. 9

EDITORIAL

WHEN THERE IS NO DROUGHT

In a recent bulletin issued by the United States Department of Agriculture, the effects of the recent drought in various parts of the country were reviewed. As would be expected, those areas relying on irrigation from surface streams and canals had excellent crops (which will bring nice prices), while those depending entirely on rainfall were the ones suffering most.

Although a large percentage of farms today are so located as to be unable to secure a gravity supply from streams for irrigation, even though canals are constructed, the development of pumps in recent years and the extension of electric power lines are making available to increasing numbers the benefits of irrigation.

As a specific example, one farmer, who recently received a high line electric connection, mounted a centrifugal pump driven by a three-horsepower motor alongside a stream which crossed his farm. The installation delivered well over 200 gallons per minute through a temporary pipe line to a height of twenty-five feet. From this point the water was carried by irrigation ditches and effectively watered forty acres of beans. The pump ran continuously day and night until the job was completed.

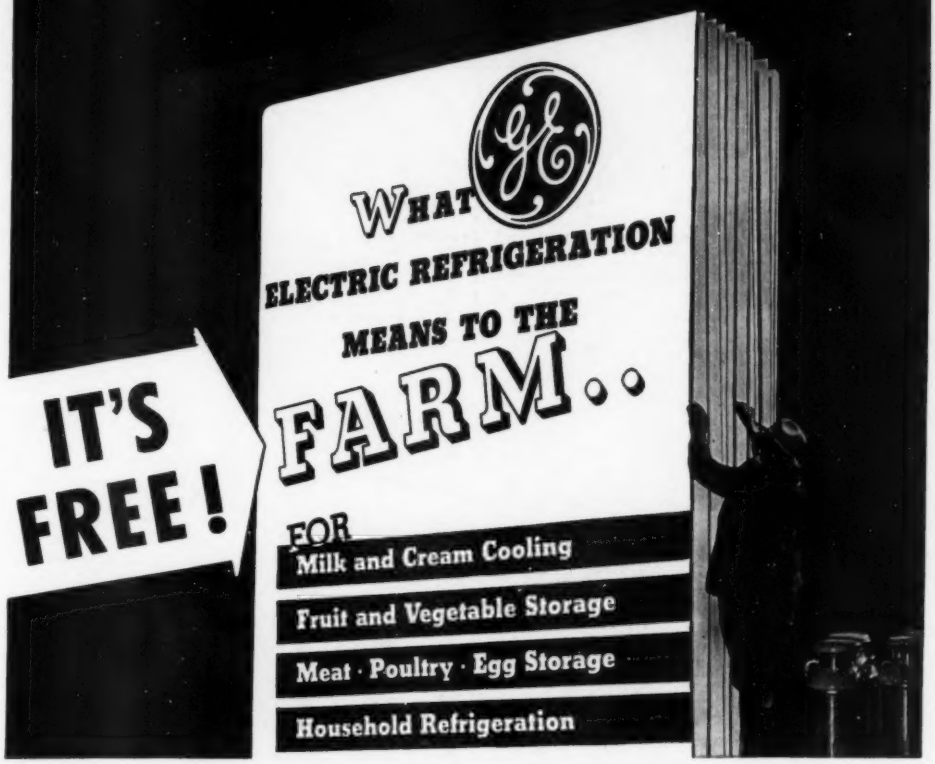
The profits from the bean crop will pay the cost of the installation and the current used several times over.

The time is rapidly nearing when the element of chance will be practically eliminated from farming—when reliance will not be placed on rainfall for watering crops. And electrification of farms with central station service and the increasing use of centrifugal pumps for irrigation will contribute the major portion to this advance.

FRED SHEPPERD.

Issued Monthly by
CASE-SHEPPERD-MANN PUBLISHING CORP.
Editorial-Executive Offices: 24 West 40th Street, New York
KARL M. MANN, *President* — I. H. CASE, *Vice-Pres. and Gen'l Mgr.*
FRED SHEPPERD, *Editorial Director* — JESSE H. NEAL, *Vice-President*
K. H. GORHAM, *Advertising Manager*
CHICAGO: 6 No. Michigan Ave.—W. S. CLEVENGER, Western Manager; L. M. ROCHE, Western Representative
SAN FRANCISCO: 444 Market St., Room 305—C. H. WOOLLEY
Subscription price, 75 cents per year; single copies, 10 cents; Special Bulk Rates on Application
Contents Copyrighted 1936 by Case-Shepperd-Mann Pub. Corp.

Everything you want to know about MODERN FARM REFRIGERATION



Send for G-E's New Book Just off the Press!

• Here's the first and only book of its kind ever printed on modern electric refrigeration for farms. You will find it an extremely valuable guide—whether you own or operate a truck farm, fruit farm, dairy farm, poultry farm, or butcher your own meat for sale or home use. It is profusely illustrated, interesting, instructive —includes many money-saving tips. We have had thousands of advance requests for this new book. Make sure of getting your copy by sending the coupon *today!* No cost or obligation.

MAIL THIS COUPON NOW!

Commercial Refrigeration Division
General Electric Company, Section CZ-9
Nela Park, Cleveland, Ohio

Please send free copy of your new book on farm refrigeration.

Name _____

Address or R. F. D. No. _____

Town _____

County _____ State _____

GENERAL ELECTRIC

discovering New Flavors in low-cost meats

PORK. A Shoulder Roast of Pork that rivals the flavor of a melting tenderloin is easily cooked in the Thrift Cooker of a Hotpoint Electric Range. Low, controlled heat does it without watching on your part.

BEEF. Beef Chuck, Steamed Onions, Potatoes, Cottage Pudding—the whole meal is placed in a cold Hotpoint oven, "Chef's Brain" is set for 2 hours at 350°. Go on your way. The meal cooks to perfection itself.

LAMB. Delightful Shepherd's Pie is made by cooking a lamb stew in Hotpoint's Thrift Cooker. Place the finished stew in a casserole, decorate with swirls of mashed potatoes and brown under the broiler.

CHICKEN. In the moist, even heat of Hotpoint's no-draft oven, you can roast a veteran hen to juicy tenderness. There's no need to baste or watch the bird. And electrically roasted chicken is a treat.

WITH THE Hotpoint ELECTRIC RANGE

All farm women should learn this great new secret of cooking economy made possible by the controlled heat of the beautiful new Hotpoint Electric Ranges. Get the surprising truth about the wonderful new flavors you can enjoy with low-cost meats.

Science has discovered this new way to help balance your budget. It's the Miracle Cookery method that coaxes new flavor from inexpensive meats—and frees you of pot-watching, too. It's the reason behind the great new popular swing to electric cookery.

Ask your electric company to demonstrate the Hotpoint Electric Range. Edison General Electric Appliance Co., Inc., 5610 W. Taylor St., Chicago.

5 REASONS WHY Miracle Cookery is possible with the Hotpoint Electric Range:

Clean . . . Cool . . . Fast . . . Better Results . . . Economical

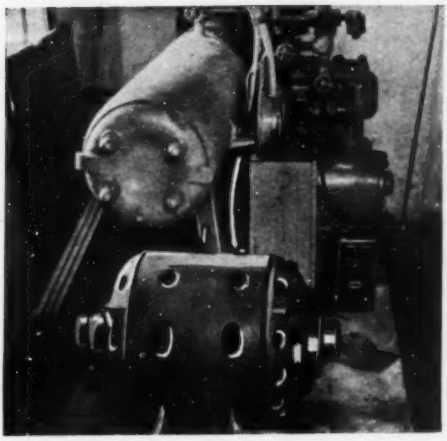
CALROD—Hotpoint's electric unit which revolutionized cooking methods, brings Hi-speed, cleanliness, and economy to the electric range.

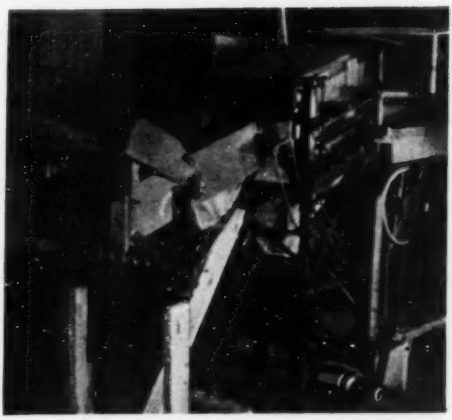
THE CAMBRIDGE—A new Hotpoint Electric Range. All porcelain enamel with chromium trim. Table-top model. Full size oven. Spacious storage drawer. Calrod units and Thrift Cooker.

THE VOGUE — (left) Hotpoint's new, modern style square-type water heater, gives hot water every hour of the day or night without one minute's attention from you.

CUTTING COSTS on a FRUIT FARM

By R. A. FULTON





SINCE the fall of 1929 Mr. George Rohrer has been putting electricity to work on his Stony Ridge Farm near Dryville, Pa.

Of the 160 acres in this farm 75 are in fruit trees. Spraying them takes a lot of water and Mr. Rohrer gave electricity the job of pumping it. He used to pump with a gas engine but it got so it sometimes took more than half an hour to start it, and it always took some more time for filling, oiling, and adjustment.

Now when he throws a switch the pump starts, and it needs no more attention till he opens the switch to stop it. The motor did not cost as much as the old gas engine and the depreciation on it is less, because motors usually last longer than gas engines. The electricity for this pumping is costing about as much as gasoline did. But the saving of one hour of labor during the pumping season, with greater convenience and lower maintenance cost, makes this a very good investment.

The orchard produces about 3000 bushels of peaches and from 10,000 to 15,000 bushels of apples each year. To avoid having to sell it all as soon as picked, Mr. Rohrer has built a modern cold storage house. Here he can keep his fruit with very little spoilage until the prices are favorable for selling.

Before he had electric power, Mr, Rohrer tried to cool his fruit with ice.

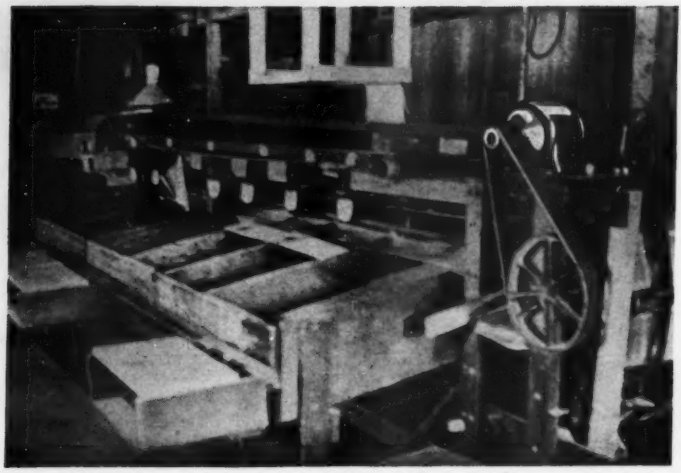
"One trial was enough," says he. "We put in three tons of ice and it melted in 24 hours. The labor of handling 6000 pounds of ice a day plus the cost of the ice and hauling it amounted to more

Upper: This little pump supplies water for spraying 75 acres of orchard.

Center: Refrigeration equipment which does the work of three tons of ice a day.

Lower: A half horse power motor shines apples faster than a dozen men.

The apple sorter is a big labor saver.



than we could hope to gain by storing the fruit. Now we use a 5 HP motor and an ammonia compressor that gives a cooling effect equal to melting three tons of ice every day. That gives us a steady cold with no labor at all."

Now that he has plenty of power, Mr. Rohrer gets better prices for his apples by sorting and polishing them. It takes only ½ HP to run the machine that sorts the apples into several different grades according to weight. Another ½ HP motor drives the polishing machine. Polishing 10,000 bushels of apples by hand would be a tremendous job. In fact the labor cost might be more than the increase in selling price. But the machine does it rapidly and gives the apples a fine finish that helps them to top the market.

This apple packing and storage house is fully protected by a burglar alarm system. If anyone enters any door or windows a gong rings in Mr. Rohrer's home, and gives him a chance to investigate the alarm. This protection can easily save him a whole truck load of apples most any dark night.

Another form of protection in the storage house is an electric heater that keeps the compressor room above freezing during the winter when the machinery is not in use. Freezing would damage the equipment. Any kind of a stove would require some attention and add some fire hazard. But an electric heater solves this little problem at the snap of a switch.

Mr. Rohrer also cuts costs with current in his green house. There he uses lead-covered soil heating wire to provide heat for early pepper, tomato and celery plants.

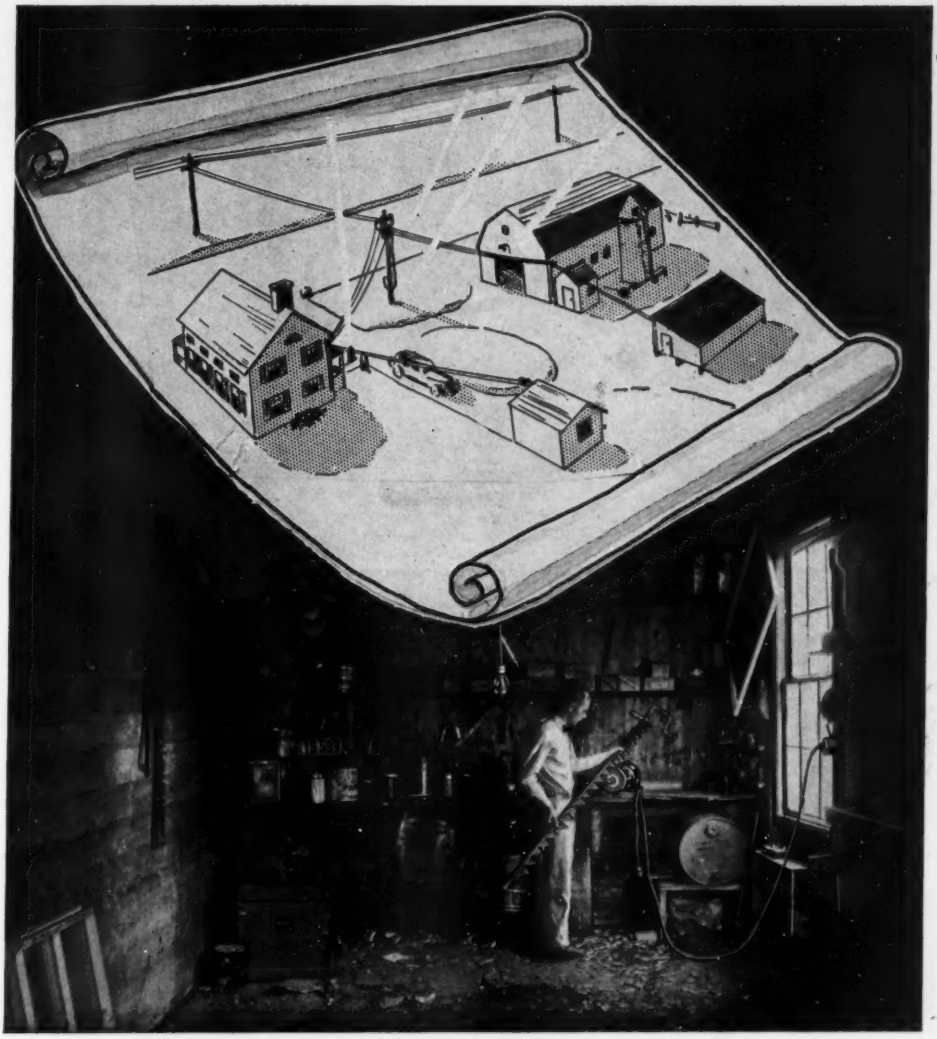
"We find that more seeds germinate, the plants grow faster and get sturdier in the wire-heated beds than in the check beds," he explains. "They are ready for transplanting much earlier.

"We harden off our plants in cold frames out doors, and here we find the soil heating wire fine insurance against an unusual cold snap or a late frost that would kill unprotected plants. The lead covered wires will last for years and we use the current only when we need it, so the cost is very little in comparison with the protection we get."

A separate meter in the green house showed that a bed 15 feet by 3 feet required only 130 kilowatt hours for the whole season.

These are the more uncommon uses of current that make Stony Ridge Farm worthy of study by anyone with similar problems. In addition the Rohrers enjoy an electric range, refrigerator, ironer, water pressure system, and water heater as well as the smaller appliances that are constantly becoming more common as people learn how much they add to the ease and comfort of living.

Fruit Storage Building on Rohrer Farm.

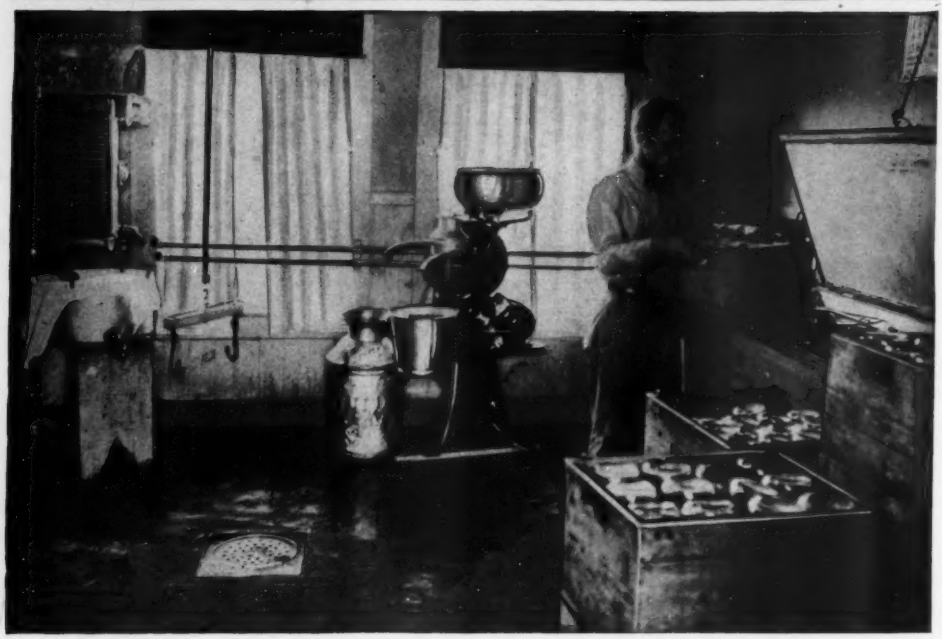


PLANNING FOR POWER

THIRTY years ago when the elder Mr. Estabrook bought his farm at Randolph, Vermont, he had a definite plan for making it better and more profitable. He looked ahead, he studied and investigated all of the methods and all of the equipment that offered him help for better farming. Since 1924 he has had his son Clyde as a partner and the two have continued this policy of planning ahead for the profitable use of power and equipment.

"When my father purchased it," says Clyde Estabrook, "this farm supported only 10 cows, a few calves, and a pair of horses. He began at once to build up its fertility; he reclaimed waste land, and he increased our acreage by purchase of a nearby tract, too. Today we have quarters for 31 milking cows, 11 stanchions for young stock, four calf pens, and a bull pen."

Shortly after the son came into the partnership, they remodelled the buildings and changed the main feature of the farm business. They had been shipping milk, but began at that time a retail dairy route. They put their emphasis on the quality of the milk their Jersey cows produced, and their modern methods, safeguarded. They saw the economy of machinery and made use of it so exten-



Upper: Intelligent plans and efficient power are combined in this neat farm.

Lower: The Esterbrooks have cold milk without the bother of ice.

sively that theirs is one of the few farms in Vermont to depend wholly on machinery for its operation. They do not keep a single horse on the farm.

When the electric power lines came down their road, four years ago, they planned ahead for using electricity, too.

"When we put in the wiring," says Mr. Estabrook, "we planned for our future use as well as our present needs, by installing a 3-wire entrance and putting in outlets where we thought we might need them. It cost a little more to do this, of course, but it has already proved an economy."

The wires that distribute the electricity to the various buildings

all run underground in conduits, so there is no danger of injury to the wires or from them. There are three lights about the yard. One or the other of them can be turned on from almost any building.

As soon as they got the current out to the farm, they took out the milking machine engine and put in a 1½ hp. motor.

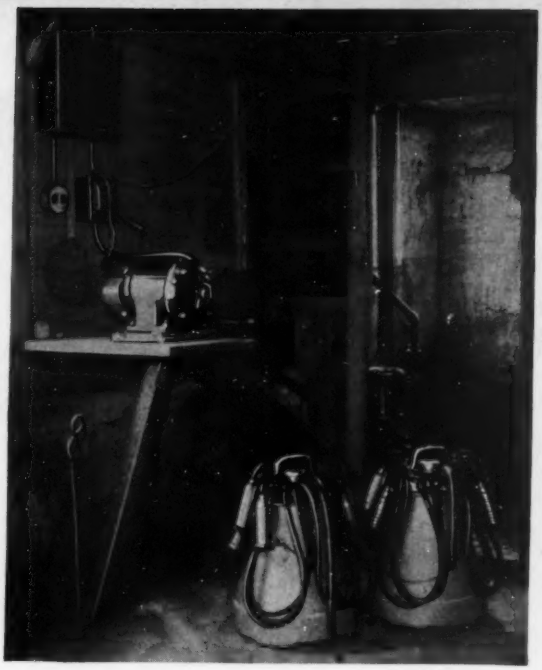
"It seemed mighty good not to have to bother with filling up the engine with gas and oil, then to stand there and crank and crank on the thing," said Mr. Estabrook. "Now all we have to do is throw a switch. It's quieter. Probably you know as well as I do that the quieter you can be around cows, especially Jerseys, the more milk they will give. Anyhow changing to the quieter motor does seem to have increased our production. Besides that, it's cheaper. Where the engine took 10 cents worth of gas an hour, the motor uses only half as much for electricity. That saving alone chopped $3.00 off our operating expenses each month."

The six trucks and tractors that do the work of horses on the Estabrook farm have batteries that need careful attention. To cut down the expense of keeping them charged, Mr. Estabrook bought a battery charger, a 200 watt charger that he can run 24 hours for 10 cents. He figures that this piece of equipment is saving him about $20.00 a year for battery charging; nor does he have to take the batteries out of the trucks or tractors to charge them.

The milk route from the Estabrook dairy has grown longer and longer as patrons pleased with the quality of their milk advertise it to their neighbors.

"To keep pace with the rising standards of milk production, we installed next an electric milk cooler," Mr. Estabrook says. "It is a dry storage box that will hold 120 quarts. The aerator that goes with it can cool 360 quarts an hour. The temperature of the cooling brine is 20 degrees above zero; that keeps the tank around 35 degrees all the time. The mechanism is set for a variation of 4 degrees in temperature. It has a third horse power motor that runs about one hour out of four, I should say. Anyway, I figure my daily cost for cooling is only 4½ cents. The pump which circulates the brine through the aerator has a ¼-hp. motor. I suppose we use it about half an hour a day, and that only during the summer months, so we set down about 62 cents a year for running this pump. At that the man who set up the equipment said our operation costs would be higher because we have the aerator about 15 feet from the cooler in order to have it closer to the sink. The added convenience would be worth considerable additional cost."

They separate cream by electricity, too, on this farm. This saves them time as well as work for the operator can be busy bottling milk while the separator is running. This is not a big job, but the whole operation is planned to do all the work in the most efficient way. Mr. Estabrook figures that this quarter horse motor runs 40 quarts of milk through the separator every day at an annual cost of not more than 30 cents.



Above: This clean, quiet motor speeds up the milking.
Below: Esterbrook Farm, Randolph, Vt.

"As soon as we can," says Mr. Estabrook, "we expect to put in a 5 hp. motor to do the heavy power work. We know this will pay. Our experience with other electrical equipment convinces us that a motor will do a better job at less cost. Our neighbors who are using a motor like that say they can fill silos and saw wood for about 1 kilowatt hour of current for a ton of silage or a cord of wood."

The Estabrooks think that life on a farm that has electricity for lights and power is easier and pleasanter, too. Using that power cuts down the drudgery and gives them more time to use as they like.

"It certainly pays to study what electricity will do and to plan ahead to make the most profitable use of it," Mr. Estabrook concludes. "Last year we used an average of 236 kw. hrs. a month and we certainly got our money's worth for all of it."

Right: A one-eighth H. P. motor replaces a man or boy at the crank.

Below: The old vacuum cleaner fan in a new role.

TIME SAVERS

By C. J. HURD

HOW many times have you looked for Johnny to turn the grindstone so you could sharpen your axe, butcher knife or whatnot, and found Johnny not only missing but very suspiciously missing, "on purpose." Also during the winter months when you decide to make a new log chain, or repair some equipment, that Johnny also was found "not present" to operate the hand blower on your forge? I don't know for sure whether Mr. Anderson living near Malin in Klamath County, Oregon, or Mr. Rodgers on Coos River, Coos County, Oregon, were thus motivated in making two ingenious "Johnny Savers." Anyway, they are worth passing on.

Mr. Anderson had an old fashioned hand turned grindstone, of which he was very proud. It was seldom, however, that he used it, simply because it was inconvenient to find someone to turn it for him. Removing the hand crank, he put in its place a reduction gear arrangement very similar to that of a washing machine wringer reduction. In fact, a reduction gear from an old worn out washing machine would work satisfactorily. To further reduce the speed he used a small pulley on the motor and a large pulley connected to the reduction gear device. The result was that the grindstone was turned slowly at just about the same speed as though it was hand turned. However, it was better than hand turning because regardless of the pressure applied on the stone by the tool being sharpened the speed still remained nearly the same. A ¼ H. P. electric motor from an old washing machine furnished ample power, regardless of what tool was being sharpened.

Mr. Rodgers' hobby is his farm shop. By the use of a ¾ H. P. electric motor and a line shaft, 13 different farm shop tools can be operated. Mr. Rodgers makes many fine tools, besides keeping his farm machinery in first class shape. He finds real pleasure during the winter months working in his farm shop. A homemade forge is his special pride, particularly the blower that he finds very handy and convenient.

"In building this forge," Mr. Rodgers said, "I planned to use a hand operated bellows. I found out, after making a large one, that I simply could not control the amount of air that I needed for various jobs. The next blower I tried was a regular forge blower, connected by a belt to the line shaft which operated my other equipment. This worked much better but was not yet exactly what I wanted."

"Having an old vacuum cleaner that was not being used," Mr. Rodgers continued, "I decided to experiment with the fan on it. I removed the cleaner bag and connected in its place the air pipe leading to the forge. Trying the fan out I found to my delight that it furnished an ample quantity of air. However, to regulate the amount, I put a valve in the air line between the fan and the forge. By regulating this valve, any kind of fire, from a blaze two feet high to one six inches high can be easily made. Since the electricity used by this fan is less than a 60 watt lamp, I leave it on all of the time I am using a fire in the forge. This forge is now as modern as any you can buy."

KEEP THE VENTILATING FAN BLADES CLEAN!

By HOBART BERESFORD*

THE efficiency of electrically operated ventilating systems depends upon clean fan blades as shown by tests made at the dairy farm of the University of Idaho. The fans have a tendency to collect dust and dirt on the leading edge of the blades and a considerable accumulation of material may reduce their capacity as much as 40 per cent. Dirty fan blades cause the fan to operate as a fly-wheel; hence, less power is required to drive the fan that is heavily ladened with dust and dirt. A clean fan required only 2.1 per cent more electrical energy to obtain the increase of 40 per cent efficiency.

The two exhaust fans in the main barn and two similar fans in the milking wing have sufficient capacity to completely change the air in the barn about every ten minutes. Wind direction and variations in velocities have only a slight influence on the ventilating effect of the exhaust fans. A breeze of about eight miles per hour causes less than two per cent decrease in the capacity of the fan on the windward side of the barn. The chief advantages of an electrically operated ventilating systems in the dairy barn and milk house are found in the removal of steam caused by the washing of cans and sterilizing of dairy utensils; making it possible to dry the floor quickly after washing in the milking wing, and the reduction in the accumulation of frost or sweating on the walls and ceilings of the stable during adverse weather conditions.

The period during which the fans are used to a greater or lesser degree extends from about the middle of October to the middle of April. If the total cost for electrical power to operate the fans is charged to this six month period at the rate, for example, of $0.03 per kwh., the average operating cost for the fans in the milking wing is $1.05 per month, and for the stable $0.97 per month. The use of the fan in the milk room is spread throughout the year; however, the greatest use comes during the winter months.

Clean fan blades mean greater operating efficiency

*Department of Agricultural Engineering, University of Idaho.

A well designed aluminum pan.

THE BRIGHT PAN IS AT HOME ON THE RANGE

By VERA B. MEACHAM

THE telephone rang just as I sat down at my desk yesterday.

"Hello, Hello," called an impatient voice when I took down the receiver. "Oh, is that you, Vera? Say, listen."

I've never been able to figure out why folks will insist on urging me to listen whenever I take up a telephone. That's what I'm trying to do all the time, isn't it? I said as much, and Sarita's voice hurried on.

"My new range is in. It's all wired up and going. But I wish you could have seen my dishes when I started cooking. They look awful. There isn't one that doesn't teeter up and down like a see-saw, and they are all either too big or too small for the burners. I think I should have at least three new ones that are just right. John says 'What's the difference, you can cook on them, can't you?' Of course, I can but they don't look right to me. What about it?"

When she stopped to catch her breath, I hurried a word in edgewise.

"Hold everything, Sarita," I fairly shouted. "Don't you remember when we were looking at ranges, I warned you to have the right kettles, too, if you want speed and economy in your electric cooking."

"I told John so. I told him so," came her excited voice. "Only I couldn't remember why. Why is it?"

"Oh, come now Sarita," I replied. "I can't tell you the whole story over the telephone. Why don't you come over. I can show you some well made dishes, and you can browse through the bulletins on dishes for electric cooking."

"Bulletins? Bulletins?" she repeated incredulously. "You don't mean to tell me they write bulletins on what kind of a kettle I ought to use on the back burner of my electric range."

"No less," I replied grimly. "Why not? It has a far wider application and is just as important as factory processes they study and test and spend money perfecting. Why guess?"

While she was on her way over, I hurriedly ran through my files, hunting out the two bulletins from Washington Experiment Station, one "Baking Vegetables Electrically" by Venona Swartz, and the other "Utensils for the Electric Range," by Evelyn Roberts, and that other with the formidable title "A Study of Factors of Econ-

The pans must cover the burner completely.

omy in Electric Cooking of a Typical Day's Meals in Maine" by Lolie Smith, published by the Maine Agricultural Experiment Station in Orono.

All three of these bulletins are the results of careful laboratory studies on cooking economically with electricity, made because women want to use this convenient, comfortable fuel, but grudge spending money for current to waste.

The kettles, as I told Sarita, play a major part in cooking with speed and economy.

You can see how that is when you are cooking with a fuel that just runs through the wires of your range and makes heat. You are really buying that heat in quantities just big enough to do the single cooking process you have on hand, and you want to use all you buy. The right pan helps you do it.

If Sarita were here now, she would interrupt me to demand at once,

"Yes, yes. But what is the right pan?"

The right pan is as big as the burner so it covers the coil completely. It is flat on the bottom so it sits down tight on the burner. It has straight sides and a tight fitting cover.

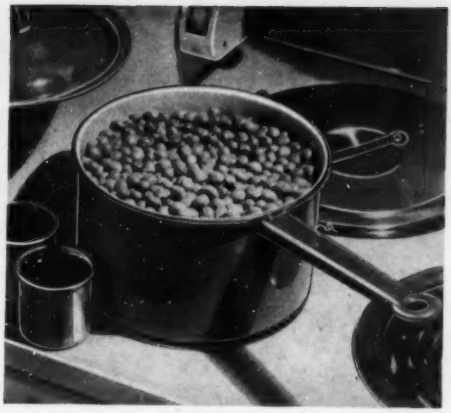
I cannot tell you what it will look like for it may be made of any metal you like, of enamel or of glass. It may be any weight you prefer, for tests have shown very little difference as far as economy is concerned in the weight of the vessel. Where weight tells is in wear. The heavier metals are more durable, and that counts, of course. Since they do not warp or buckle, they will give good, efficient service longer.

There is this about the appearance of the pan to remember, though. It may have shiny sides, but it should have a dull or black bottom.

Pan Should Completely Cover Burner

Perhaps we had better go back a step or two. You can see at a glance why the pan should completely cover the burner if you want to use electricity economically. A coil of wire outside the edge of the pan is sending out heat into the air, not into the dish of food. That's wasted heat and wasted current. Besides that, it means slower cooking when some of the heat designed to reach the food is wasted on the air.

The pan is flat on the bottom and fits the burner tightly because heat is transferred from metal to metal much more quickly than from metal to air and air to metal. Little air pockets under the pan, then, slow up your cooking. And the longer it takes to do the cooking, the more electricity you will use.



A good enamel pan with straight sides, flat bottom, and a tight fitting cover.

Dark bottoms absorb heat more quickly than shiny ones, so they, too, speed up the cooking. It is quite different with the sides. If they are shiny, they let less heat radiate out from the heated vessel.

Sides are straight, say these laboratory experts, because the vessel with flaring walls has a greater outer surface to radiate and lose heat than the vessel with the smaller side area in straight walls.

Tight covers make an astonishing amount of difference, too. You could find out for yourself by putting a kettle on to boil. But the tests already made with stop watches in the hands of some watchful engineer show that it takes from 12 to 17 per cent longer to bring the water to a boil if you leave the cover off.

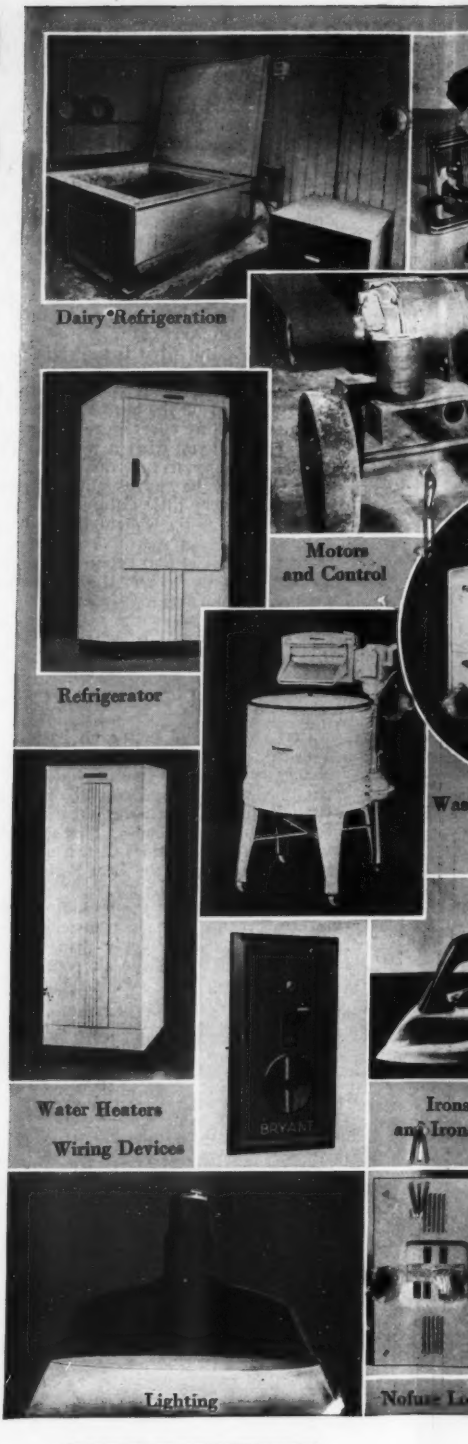
Moreover, a kettle will keep boiling for fifteen minutes after you turn the current off if it is tightly covered, and only two minutes if you snatch the cover off. You can see that it is going to take a lot more electricity to do the same work if your kettles are not covered.

You might think if you hadn't had your eyes open to the changes, that the right pan might be hard to find. It is not though. Many manufacturers have been designing their pans with an eye to the growing use of electricity. You can do down to the shops and pick out a well designed kettle in any material you want. You will find it in gleaming aluminum, in lovely jade green, or salmon pink, or plain white enamel. You will find handles that are heavy and solid, holding the dish steady whether it is full or empty. You will find covers with strainer rims, with grooves for a water seal, all fitting the kettles tightly and keeping the steam in.

One of the newest developments is a kettle and frying pan of glass. Food in these cooks quickly with little current. They have removeable handles you can take off when the food is cooked and you want to take the dish right to the table as it is.

The handles comes off so the dish can be used on the table, too.

50 YEARS



WESTINGHOUSE GOLDEN JUBILEE

WESTINGHOUSE PRODUCTS
FOR HOME CONVENIENCE

Ranges
Irons
Ironers
Mazda Lamps
Mixers
Percolators
Roasters
Dishwashers
Sandwich Grills
Waffle Irons
Warming Pads
*Ventilators
Bathroom Heaters
Water Heaters
Vacuum Cleaners
Hand-Vacs
Fans
Radios
Small Motors
Sewing Machines
Refrigerators
*Water Systems
Washing Machines
Wiring Devices

FOR FARM PROFIT

Heavy Duty Motors and Control
Small Motors and Control
*Water Systems
Safety Switches
Panelboards
Nofuze Load Centers
Mazda Lamps
Water Heaters
*Incubators
*Brooders
*Fruit Dryers
Floodlights
*Hay Hoists
*Concrete Mixers
*Milking Machines
Milk Coolers
Dairy Refrigerators
*Cream Separators
*Churns
*Forge Blowers
*Feed Grinders
*Grain Elevators
Lighting Units
Wiring Devices

** Denotes equipment using Westinghouse motors, heating units, or other electrical apparatus. Other articles listed are made complete by Westinghouse.*

# of ELECTRICAL EXPERIENCE

ready to help you

Few farmers are able to take immediate advantage of all the opportunities for more profitable farm operation and more enjoyable farm life presented by electric power.

Yet electrification does not have to be done all at once. By easy steps you can transform your home and farm into models of convenience and economy through a *planned* electrification program fitted to your needs and pocketbook.

For most satisfactory results it is wise to get sound advice from those who know electricity, its technical details, applications and costs. Westinghouse representatives are in a position to show you the latest developments in electrical equipment and apparatus for your farm.

Westinghouse, which this year is celebrating fifty years of electrical achievements, makes a complete line of electrical equipment for the farm. Why not go to your Westinghouse dealer's store . . . see the many electrical appliances you profitably can use . . . and obtain guidance in a program of electrification best suited to your requirements. Meanwhile, write for a copy of the booklet "Wired Help" which illustrates many of the uses for electricity on the farm and which shows how electricity pays its own way when correctly used. J 99407

Write FOR YOUR FREE COPY TODAY!

Westinghouse

RURAL ELECTRIFICATION DEPT., EAST PITTSBURGH, PA.

A SPEED CHANGER for Motor Drive

By H. J. GALLAGHER

ONE of the problems associated with the use of electric power is the operation of slow speed farm equipment with the standard high speed electric motor. The line shaft generally used for this purpose is a stationary installation which makes it difficult or inconvenient to transport some of the equipment to the source of power. In addition, the belt and pulley arrangement necessary to obtain desired speeds may be complicated and expensive.

In an effort to eliminate the disadvantages of the line shaft and secure a light weight portable unit that could readily be moved about the farm, an ordinary low price 16 to 1 back geared worm drive pump jack driven by a ½ h.p. electric motor was mounted on a small home made truck. The experiment proved highly satisfactory, and the outfit should find wide use on farms having electric service.

Simplicity of Assembly Illustrated

Figure 1 illustrates the simplicity of the assembly of the unit. The jack is equipped with 2 V pulleys 15 inches and 6 inches in diameter. The motor shaft has 2 V pulleys 2 inches and 3 inches in diameter. One 70-inch by ½-inch V belt connects the motor to the jack. This permits four different speeds: 14, 21, 36, and 55 revolutions per minute (R. P. M.) on the revolving jack disc. Additional speeds may be secured by using 2 belts. In this case, one belt would be used from the motor to one of the jack pulleys. The second jack pulley would be belted to a pulley on the equipment to be operated. With a small V pulley on the motor, the V belt could be used with flat instead of V pulleys on the pump jack.

In addition to operating such equipment as illustrated in Figure 2, the jack can be used as a pump jack for pumping water or the wooden jack arms can be operated in a semi-horizontal position and deliver a 10 inch stroke to a drag saw. The gears are enclosed in a cast iron housing and run in oil.

Assembly

Truck Body: Two pieces 2 x 4 x 30 inches supported on one end by two plow wheels and on the opposite end by 2 inch material of a height to level the truck.

Handle: The handle is threaded into a 1 inch pipe flange that is bolted to the platform end support. The fittings are: one 1 inch pipe flange, one 1 inch close nipple, one 1 inch x 45° elbow, 30 inch length 1 inch pipe, one 1 inch tee, 2 pieces of 1 inch pipe 6 to 8 inches in length.

Jack Mounting: The front of the jack is clamped to a 1 inch pipe supported by a 1 inch pipe flange bolted to the platform. The rear is supported by U shape ⅜ inch x 1 inch strap iron.

The height of the jack from the floor to the center of the disc is 24 inches. The height was determined as satisfactory for the majority of farm equipment. The drive shaft E. Figure 1, may be

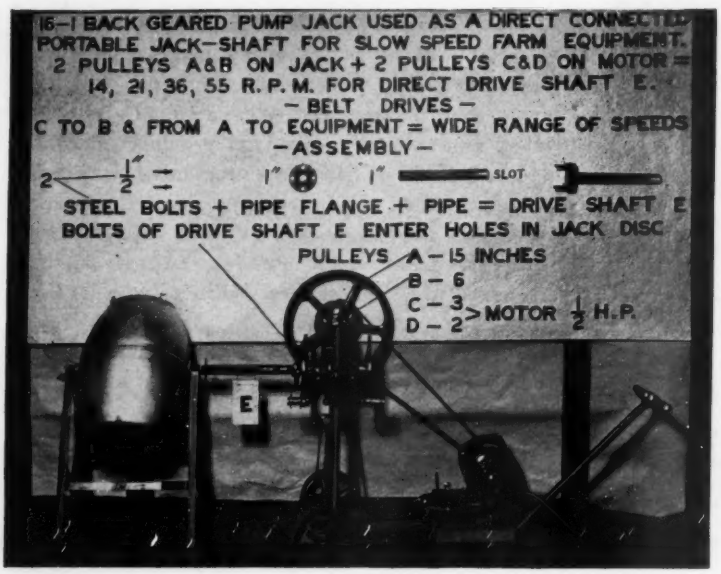

16—1 BACK GEARED PUMP JACK USED AS A DIRECT CONNECTED PORTABLE JACK—SHAFT FOR SLOW SPEED FARM EQUIPMENT.
2 PULLEYS A&B ON JACK + 2 PULLEYS C&D ON MOTOR = 14, 21, 36, 55 R. P. M. FOR DIRECT DRIVE SHAFT E.
— BELT DRIVES —
C TO B & FROM A TO EQUIPMENT = WIDE RANGE OF SPEEDS
—ASSEMBLY—
2
1/2"
1"
1"
SLOT
STEEL BOLTS + PIPE FLANGE + PIPE = DRIVE SHAFT E
BOLTS OF DRIVE SHAFT E ENTER HOLES IN JACK DISC
PULLEYS A — 15 INCHES
B — 6
C — 3
D — 2
MOTOR 1/2 H.P.
E

Fig. 1. The multi-speed reduction unit.

Thrifty Farmers SELECT RED JACKET

LOW ORIGINAL COST

LOW OPERATING COST

GUARANTEED AUTOMATIC DEPENDABLE

FROM 230 TO 10,000 GALLONS PER HOUR

Red Jacket's complete line of Shallow and Deep Well Water Systems will meet every water requirement you might have. Low original cost and low operating cost make Red Jacket Water Systems popular with farmers. All models equipped with electric motor or gas engine.

Shallow Well

SAVE MONEY *and investigate* RED JACKET

Now Red Jacket offers the farmer the best Water Systems that quality materials and fine workmanship can produce — *at prices every farmer can afford.* Farmers the country over know Red Jacket Pumps and Water Systems give years of trouble-free, dependable service —the result of 58 years' experience as a leading pump manufacturer.

Deep Well

FREE • A NEW WATER SYSTEM GUIDE

To help you select proper pumping unit for your needs. This Red Jacket Water System Manual contains lowest prices and best methods for the most efficient installations.

Red Jacket RUNNING WATER

RED JACKET MFG. CO.
Dept. B, Davenport, Iowa

Please send me immediately, without cost, your Red Jacket Water System Guide.

Name .....

R. F. D. .....

City ..... State .....

tipped up or down to connect with shafts of different heights, Figure 2.

Drive Shaft: See Figure 1. Shaft E.

Motor: ½ h. p., 60 cycle, single phase, repulsion induction, 1725 R. P. M.

The motor is mounted to a wooden base with four ¼ inch stove bolts. The base is hinged to a piece of 1 inch board. The hinged board is clamped to the truck platform with two ordinary 4 inch steel clamps. This method of mounting fractional h. p. motors is very satisfactory. The clamps are easily removed for changing the position of the motor on the truck or for attaching the motor to other jobs and the hinged base permits part of the weight of the motor to act as a belt tightener. A protective thermal overload starting and stopping switch completes the assembly. (Note: The jack disc should revolve in clockwise direction viewed from the side with the motor as assembled in Figure 1.)

The shafts of all equipment to be operated by direct drive from the jack disc should be pinned with ¼ inch case hardened pins, Figure 2, to fit the slot of the drive shaft. The holes in the jack disc should be ⅝ inch so the ½ inch bolts of the drive shaft enter easily. The hole should be equal distances from the center of the jack disc.

Cost of Unit

Worm drive pump jack, back geared, ratio 16:1	$8.35
V pulley A, Fig. 1, 15 in. diameter, 1 in. bore	2.67
V pulley B, Fig. 1, 6 in. diameter, 1 in. bore	.91
V pulley C, Fig. 1, 3 in. diameter, ¾ in. bore	.59
V pulley D, Fig. 1, 2 in. diameter, ¾ in. bore	.53
V belt ½ in. x 70 in.	1.27
Pipe fittings for handle	.26
3—1 in. pipe flanges	.21
8 ft. 1 in. pipe	.68
Bolts: 6—⅝ in. x 2½ in.	.12
4—⅜ in. x 5 in.	.28
2—½ in. steel bolts	.20
Total	$16.07

Items not included: electric motor and base, clamps, scrap pieces of 2 inch x 4 inch in platform; and the plow wheels.

Flat pulleys off some old equipment or from the local junk yard could be used in place of pulleys A and B at a possible saving in cost.

Stationary Spray Plant Thirty Years Old

Thirty years ago the ingenuity of a California fruit grower and the fact that he had electric power available combined to make a great advance in modern, scientific fruit farming. In the spring of 1906, Hayward Reed installed the first stationary spray plant on his Sacramento Valley apple farm.

For a number of years during the spring the nearby creeks had overflowed and flooded the Reed orchard. This made the task of spraying his trees for scab almost impossible. Realizing that unless the scab was stopped he might as well abandon the orchard, Mr. Reed decided to try to spray his orchard by using pipe lines. The spray was prepared in stationary mixing vats and distributed through the pipes at high pressure maintained by an electric pump. This stationary spray plant solved the problem conveniently and effectively.

Similar plants are now common throughout the fruit-growing regions of the country. Labor formerly used on a portable spray machine is cut 40 to 50 percent with such a plant, expense is reduced one-half, and the time needed to cover an orchard is reduced. The time element is very important, since spraying must be done during certain short stages in the life of an insect to destroy it.

In addition electric stationary sprayers permit spraying when the ground is wet and soft. Hillside orchards can be sprayed easily, and cover crops are not injured by wheels or horses. Electric power reduces the power-cost per gallon, and maintains higher and more constant pressures.

Fruit Cleaned, Too

A satisfactory method for cleaning fruit is necessary, especially since the enactment of stricter food laws requiring removal of arsenic spray residues to a tolerance of .01 grains of arsenic to a pound of fruit. Electricity is useful here in running brush cleaners, graders, and root-washing machines. Peach fuzz can be removed, and vegetables trimmed, bunched, and washed.

Fig. 2. One-fourth inch case hardened pins are fitted to the shafts of equipment to be operated and the direct drive shaft of the multi-speed unit is inset instead of the customary belts and pulleys.

ELECTRICAL HOUSEKEEPING

Conducted by
GAIL MEREDITH

If YOU Want an Ironer

THERE are just two reasons why any woman should want an ironing machine. Two simple, three word reasons: they save work, and they save time. Your work, and your time, of course.

If you have been looking over ironing machines, you already know that it takes practically no woman power to run an ironing machine, just a touch on a lever or a button to start the motor or to bring the shoe against the roll or buck. These simple effortless motions take the place of all the lifting and pushing, and pressing that you do with a hand iron.

You lay the material in place and see the heat and pressure automatically supplied to do the ironing.

What's more, you can sit down to the job.

You choose a comfortable chair in the coolest place in the house, and start in.

The time they save differs. But instead of an iron little bigger than your hand, you have from 150 to 300 square inches of hot shoe ironing out the wrinkles. Doing the sheets and towels and the like, most any operator can save from one-third to one-half the time she has been spending on that part of the ironing and make things look better, too. For dresses and shirts, for underwear and children's clothes the saving of time depends entirely on the skill of the woman ironing. Some women do all of their clothes on the machine; others find that they can get the results they want more easily by sticking to the hand iron for some of their dresses, for baby things that are particularly fussy, and for smocked dresses the children wear. They wont seem much of a task with the rest of the ironing all folded and done at her elbow.

If you are going shopping for an ironing ma-

RUNNING WATER

QUALITY in a water system may be expressed by the one word, "reliability." When a faucet is opened, the water must flow. Thousands of satisfied suburban and farm families willingly testify to the dependable performance and low operating cost of MYERS Water Systems. Now, while prices are low, is the time to join this happy group by installing a reliable MYERS system. Styles and capacities to suit all needs—for deep or shallow wells. Our local dealer will be glad to assist you in selecting the equipment that best meets your requirements. Write today for free booklet.

THE F. E. MYERS & BRO. CO.
1128 Fourth St. Ashland, O.

"Pump Builders Since 1870"

Water Systems ☐
Hand Pumps ☐
Power Pumps ☐
Sump Pumps ☐
Centrifugal Pumps ☐
Pump Jacks ☐
Hand Sprayers ☐
Power Sprayers ☐
Hay Tools ☐
Door Hangers ☐

Send information on items marked and name of your nearest dealer.

Name .....

Address .....

.....

MYERS
WATER SYSTEMS

chine this autumn, there are certain points to check, certain things to look for if you are to be sure of satisfaction.

Perhaps you know already that there are two different kinds of ironing machines, the rotary and the flat plate. Each has its ardent supporters. Whichever you favor, you will be wise to pick out one with sturdy construction and with the name of a reliable manufacturer on its name-plate. Moreover, for equipment that may need service some day, and the best machines can develop trouble, it is safer to buy from a dependable local dealer who has a permanent place in your town.

If you haven't looked into this matter of ironers very closely, let me remind you that the rotary iron has a curved ironing surface or shoe which irons your clothes against a padded revolving roll. The pressure of the shoe against the roll or ironing board is applied automatically by the mechanism of the iron.

The flat plate ironer has a wide padded buck for an ironing board, and a metal shoe the same size that comes down on the board at the touch of a lever. You just lay the garment you want to iron flat on the board, roll the shoe forward on its carriage and pull a lever that exerts the pressure.

Selecting your ironer will depend somewhat on where you are going to use it. If you are going

to keep it in the kitchen, you will probably be a little more particular about its looks than you would be if it could be kept permanently in a basement laundry. The most popular ironers are mounted on their own tables, light enough so you can easily roll them about. In all probability the slightly increased cost of the swinging table top—you can get this with ironers of either type—will be more than justified in the convenience of an extra table in the kitchen six days a week.

Now for details. Suppose you begin by looking at the important controls. Sit down at the ironer yourself. Try the controls, one by one. Make sure they are easy to reach, easy to operate, and quick in their response.

The rotary ironer should have a control to throw the roll out of gear so you can press clothes without having the roll turning. This same device will allow you to move the roll by hand. If you have a pleated skirt to press, or even to iron, you want to be able to lay it out on the roll, then move the roll into just the right place opposite the shoe to press the pleats in. Because you sometimes press a woolen skirt, and sometimes iron a linen towel, the pressure of the shoe on the roll must be adjustable.

There should also be a safety release that will operate without electricity. Then if the current should go off while you are ironing, you can release the shoe from the roll. This safety release should be either automatic or very easily operated. And it should be placed where you can reach it on the instant.

After you have satisfied yourself about the controls, turn your attention to the shoe, the iron of the machine.

It ought to be rust proof, stain proof, and scratch proof. It should be hung so you can easily move it away from the roll for cleaning, and far enough from the roll to let you lay out the clothes to be ironed without touching it. The heat should be distributed evenly over the entire

GET RUNNING WATER FIRST!

Ask your dealer for details about the Deming Easy Payment Plan.

$55.75 F.O.B. Salem, O.

No other purchase can give you so much convenience and comfort for so long a time at so little cost. Avail yourself of the help of one of the world's largest exclusive manufacturers of pumps to assist you in selecting exactly the right pump for your requirements.

Send for Deming Water System Catalog, describing in detail the "MARVELETTE" and a wide variety of other modern pumps and systems for farm and home. Free on request.

Act NOW to have running water in your home.

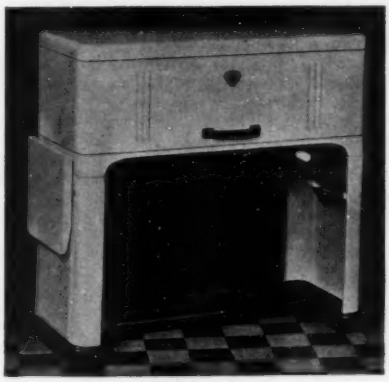
THE DEMING CO.

92 BROADWAY · SALEM, OHIO

Pump Manufacturers Since 1880

surface, and there should be enough heat to dry the clothes quickly.

There is one exception to this even heat distribution that I should point out, and you may like to consider. Some ironers have extra heat



in the part of the shoe that is used the most. That keeps the shoe from cooling down when you use it steadily.

On some shoes there are automatic heat controls that you can set for any ironing temperature you want. Some even have two controls, one at each end so either half of the shoe can be controlled separately.

Now for the ironing board. Like any other board you have ever used, you want this one, the roll or the buck, to be evenly, thickly padded. You want the cover to come off easily so you can wash it now and then, and you want to be able to get the padding off, too, to air it and fluff it up. Some provision for ventilation in the roll, or the buck, is a help too. A rotary iron should have an open end to make it easy for you to iron ruffles and skirts and dresses.

There are so many good ironers on the market today, that you should be able to find one to your liking at a price you can afford to pay.

• • •

Three

PEANUT BUTTER SANDWICHES

NOT long ago the columnist in our local paper set the town by the ears when she reported that Howard Chase says he has eaten three peanut butter sandwiches for lunch for seven years. Howard Chase, by the way, is a figure of some local importance in our town, and he takes his lunch, as do many other men in his office, so he can have time for a game of chess during the noon hour.

When the news of his somewhat startling fidelity to peanut butter sandwiches appeared, his friends chaffed him mildly, and his wife—who daily mixes him a salad, fixes a hot or cold drink according to the season, and plans some pleasing dessert to top his varied sandwiches—pouted a little at such misrepresentation, but Mr. Chase himself, so far as anyone could see, thought it a good joke.

An observant writer for the Associated Press

Save

TIME AND WORK GET MORE DONE

When you put a Century Motor on the job you get more work done, at less cost, in less time—Pumping Water, Grinding, Shredding, Baling, Feed Mixing, Sawing Wood and other back-breaking jobs that take the profit out of farming when you do them by hand.

And—remember this: When you buy a Century you get a motor with an outstanding performance record as a pioneer in the field of rural electrification.

CENTURY ELECTRIC COMPANY
1806 Pine Street St. Louis, Mo.
Offices and Stock Points in Principal Cities

Century
MOTORS
UP TO 600 H. P.

picked out the item as of more than casual interest and it was reprinted from Nome to Miami, from Bar Harbor to the Rio Grande.

That made it quite a different story for Mr. Chase. On the instant the world took up its pen and wrote him, urgently, warningly, imploringly. Doctors, nurses, dieticians, well meaning nobodys in particular, and a thousand cranks sent him suggestions for improving this menu.

Which, if it means anything, would argue that all the world seems to agree that, taking it year after year, there should be a certain variety in the sandwiches anybody eats.

Of course your children think so too.

If you sometimes feel that you have used up all

the sandwich ideas there are in the world, you would get a fresh inspiration by dipping into Special Circular "Let's Have Sandwiches" by Stella Patton, and published by the Extension Service of the College of Agriculture, the University of Wisconsin, Madison.

Miss Patton thinks quite a lot of peanut butter herself.

"Peanut butter," she says, "is a staple that may be varied in many ways. It may be combined with grape marmalade or almost any kind of marmalade or jelly. It may be softened with salad dressing and combined with raisins, dates, or currants. Peanut butter may also be used with finely diced, crisp bacon sprinkled over the top."

Besides a host of recipes for sandwiches of gayer sort for all occasions, she gives a page of suggestions for these hearty picnic or school lunch sandwiches.

Bacon—cooked crisp, cut into small pieces and mixed with an equal amount of hard cooked egg, and a little relish.

Dried Beef—ground, moistened with salad dressing, or browned in butter until slightly crisp.

Liver—freshly cooked or left over, ground up and mixed with a little chopped onion, sweet pickle or parsley, and salad dressing.

Salmon—or other fish, mixed with diced cucumbers or sweet spiced pickles. Use about ¼ as much cucumber as fish and moisten with salad dressing.

Cottage Cheese—or cream cheese, mixed with crushed pineapple. Salad dressing as needed. 1 cup full mixed with 1 tablespoon chives, or onion, ½ cup chopped nuts, and 2 tablespoons minced green pepper. Salad dressing will be needed to moisten this. Good between steamed brown bread. Mixed with chopped or sieved prunes, apricots or raisins.

Banana—½ cup peanut butter mixed with ½ good sized banana cut into small pieces, and thinned with about a tablespoon of orange juice.

Carrots—raw, grated or chopped fine, and mixed with ½ as much nuts or raisins, and salad dress to moisten.

ON THE AIR

Conducted by JEROME J. HENRY

Radio Stars Keep Cool in Summer

"WHAT are you doing to keep cool?" This question was asked point blank of radio stars this summer, and some sample replies follow:

Frank Fay said he has no trouble at all. He issued the following statement:

"My advice is to wade right into the melting asphalt and enjoy the weather. July weather will seem divine if you just concentrate on the heat some of us may be in for when we get to the place we may be going."

Colonel Stoopnagle and Budd are even more peaceful.

"Buy yourself an assortment of extra large bottle stoppers," says Budd. "It's amazing how much relief these will provide if you pop one into the mouth of every guy who asks, 'Is it hot enough for you?'"

• • •

Mary Pickford's Famous Parties on Air

MARY PICKFORD'S famous parties at Pickfair, with her in the real life role of charming hostess, are now being broadcast over CBS stations from her mansion in Beverly Hills, the mecca of movie stars.

In the broadcasts, entitled "Parties at Pickfair," America's sweetheart is the hostess at informal gatherings in her own drawing room. Her invited guests are Hollywood personalities and, figuratively, the radio audience, which will be

Linda Lee, featured radio singer, looks like the inspiration to the author of the song, "Linda Lee." Five feet, two inches tall, she weighs only 98 pounds. She hails from New Orleans, where she got her soft drawl.

made to feel at home in the spacious mansion. Each week Miss Pickford arranges a program of entertainment by stars of the motion picture

world. You may hear the parties every Tuesday evening.

This is the first time in radio history that an entire series of programs has been broadcast directly from the home of a famous personality. "Pickfair" has been especially wired for this purpose, in order to achieve the ultimate in informality and freedom from self-consciousness on the part of both guests artists and listeners. The famous actress welcomes her friends, draws them into conversation, and arranges and announces the various entertainment features of the evening.

This is the second engagement which Mary Pickford has filled over the air. Her first was a series of 25 tabloid dramas, heard last season. During the previous year she toured the country in a tabloid version of "The Church Mouse." The current program may be heard over an extensive number of stations located in all parts of the country.

• • •

In the Noisiest Room at NBC

THE noisiest room and by all odds the queerest room in Radio City is a little known, empty white-tiled chamber tucked away in a corner of the NBC studio layout.

The room is more than a little bit queer. The ceiling slopes and the walls, no two of which are parallel, diverge at odd angles. Though the brightly lighted cubicle is little larger than a kitchen pantry its only door is the heaviest in Radio City. It has a thickness of nearly five inches and reminds one of huge doors to refrigerators.

Engineers identify the room as the "reverberation chamber"; the average person would call it a place to test acoustics.

In this out of the way room, hidden from the eyes of sightseers and even the company's employees, engineers track down with sensitive apparatus the absorption of sounds.

The reason for the irregular walls and ceiling is to keep sound bouncing around the various surfaces as long as possible. The room is lined with glazed tile to make it more "live" or as reverberant as possible. The harder the wall surface the longer it takes for the sound to die away.

But there's no fear that sounds tested in this room will go far. Adjacent to it is the quietest room in Radio City. It is the acoustic laboratory, and it is so "dead" that you can hear the blood pounding in your temples.

In this chamber are determined the efficiency and characteristics of microphones, loudspeakers, etc. In contrast to the noisy chamber, with its hard surfaces, this room is distinguished for its extreme deadness or absence of reflections.

• • •

Tiny Transmitter on Air From Tophat

REPEATED tests and an actual broadcast have convinced engineers that the new micro-wave transmitter—so tiny that it can be contained in the top of a silk hat—is the latest successful addition to the science of radio broadcasting.

The broadcasting test of the "tophat" transmitter was made last Easter Sunday. George Hicks, NBC announcer, put on the silk hat con-

(*Continued on page 27*)

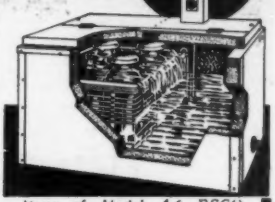
The Only Milk Cooler That Maintains

A CONSTANT "NECK-HIGH" WATER LEVEL

ESCO NI-AG-RA

One Can . . . Half Capacity . . . Or Full Capacity . . . It's all the same to the ESCO "NI-AG-RA."

The water level never varies . . . thanks to this new and patented feature that only the "NI-AG-RA" has.



View of Model A-6 ESCO "NI-AG-RA", cut-away to show automatic "Neck-High Water Leveler."

The morning milk goes right in with the evening milk . . . and the icy cold water level stays exactly the same . . . right up on the necks of the cans above the milk level. The ESCO "NI-AG-RA" Cools ALL the milk in every can evenly to 50 degrees (or lower) in about one hour.

Write Today . . . Get FREE BOOKLET telling all about the 24 special features that make the ESCO "NI-AG-RA" the ideal milk cooler for you.

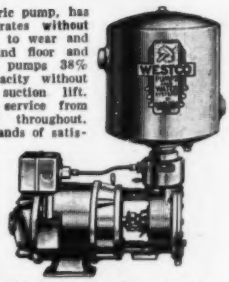
ESCO CABINET COMPANY

600 E. Biddle St., West Chester, Pa.

THIS ELECTRIC PUMP HAS ONLY ONE MOVING PART!

NO Belts NO Valves NO Packing NO Priming

WESTCO—world's simplest electric pump, has only ONE moving part. Operates **without metal-to-metal contact.** Nothing to wear and get out of order. ● To ground floor and basement faucets, a WESTCO pumps 38% more water than its rated capacity without using extra current. 28-ft. suction lift. Bronze Liners assure lifetime service from pump casings. ● Rust-proof throughout. Quiet. Cheap to operate. Thousands of satisfied users. MONEY-BACK GUARANTEE. ● Mail coupon below for FREE colorful Catalog. MICRO-WESTCO, Inc., Bettendorf, Iowa. **Dealers from coast to coast.**



Westco Pumps and Water Systems

275 gals. per hour Westco. Others up to 3000 gals. per hour. Larger tanks available.

COUPON BRINGS CATALOG

MICRO-WESTCO, Inc., Bettendorf, Iowa. Dept. E-9. *Without obligation, please send me FREE Westco Catalog.*

Name .....

Address .....

City ..... State .....

LIGHTS PROTECT RICE FIELDS

STUTTGART is the heart of the rice district in Arkansas, and wild ducks like rice. They come to the district by the millions and a marauding flock can clean up a 60-acre patch of rice in a single night.

Mr. C. C. Cox, rice farmer living a bit south of Stuttgart, installed two revolving search lights with a half-mile ray, turned them on at dusk and let them run until the ducks left at daybreak, to his own good satisfaction and the infinite disgust of the ducks.

Says A. G. Whidden of the Arkansas Power & Light Company, Pine Bluff:

"Stuttgart is the center of the rice industry in Arkansas. With numerous rivers, bayous, lakes—many created by changing the courses of rivers—this is a great duck country, as the accompanying photos made on two of the lakes demonstrate.

"Millions of ducks spend the winter in the rice country, and already millions are there. Rice growers have not completed harvesting their crops—lots of rice still remains to be cut, and lots more is shocked in the field. The ducks spend the day in the lakes, and fly to the rice fields at dusk to feed all night. They attack rice in the shock as well as the uncut rice; in fact, the shocked rice is a feast of plenty for them.

"The great increase in ducks this year over last has caused many rice growers to become very apprehensive.

"The lines of the Arkansas Power & Light Company serve the rice fields for irrigation and other purposes. The use of lights to frighten off the ducks was inaugurated some years ago by Fletcher Minnis, district manager at Stuttgart for the power company. Mr. Minnis has now taken up the suggestion to build a revolving beacon in which 200-300 watt lamp may be used."

Above: A lake and (below) Tindall's reservoir near Stuttgart, Arkansas, where wild ducks in huge flocks have taken up residence, much to the annoyance of rice farmers.

On the Air

(*Continued from page 25*)

taining the transmitter and strolled along New York's fashionable thoroughfares as he broadcast to the networks a description of the Easter parade.

Power for the "tophat" transmitter comes from batteries in a wide leather belt which the announcer wears. A wire from the batteries, tiny dry cells especially designed for the transmitter, connects with the mechanism in the top of the hat. Another wire is connected with a small microphone which the announcer carries in his hand. The program goes out over the slender metal antenna atop the hat and is relayed to the networks.

The importance of the new transmitter that makes a walking radio station out of a man lies in the fact that it gives an announcer almost complete freedom of movement, freeing him from the disadvantage caused when he must trail wires after him, or carry heavy equipment.

The test of the new transmitter was very satisfactory. Despite the fact that weather conditions were bad, and the jostling crowd that surrounded the announcer, Hicks' words came through and were perfectly clear when the program was picked up and rebroadcast to the country.

Durelle Alexander, new star with Paul Whiteman's entertainers.

• • •

Studio Chatter

UNCLE EZRA wonders how the old timers air condition their beards—putting on chin whiskers on hot days isn't all its cracked up to be, he says.

Freeman Gosden (Amos, of Amos 'n' Andy) has a Hollywood swimming pool he will sell, lease, or give away. The reason: a water bill of $53 for one month.

Tim Ryan and Irene Noblette live in a New York penthouse, yet Irene does her own cooking and Tim washes the dishes.

Stoopnagle and Budd delight in getting Harry von Zell in a corner and whispering jokes to him just before announcements so Harry has to go to the microphone fighting guffaws.

Why not give your family a Uniflow Water System?... It pays dividends

A good dependable water system never fails to pay its way by increasing production on the farm and convenience, health and sanitation in the home. ***Uniflows are sturdily built—long-lived—cost little to operate and their original cost is as low as any other well known system.*** **Free literature and information readily given on any of the products listed below. Write today.**

ELECTRIC
Water Systems
Cellar Drainers
Milk Coolers
Refrigerators
&
Water Softeners
SEPTIC TANKS

1503 EAST LAKE ROAD
UNIFLOW
ERIE PENNSYLVANIA

STA-RITE WATER SYSTEMS

—both Deep and Shallow Well—are built in any capacity for complete water supply on any size of farm.

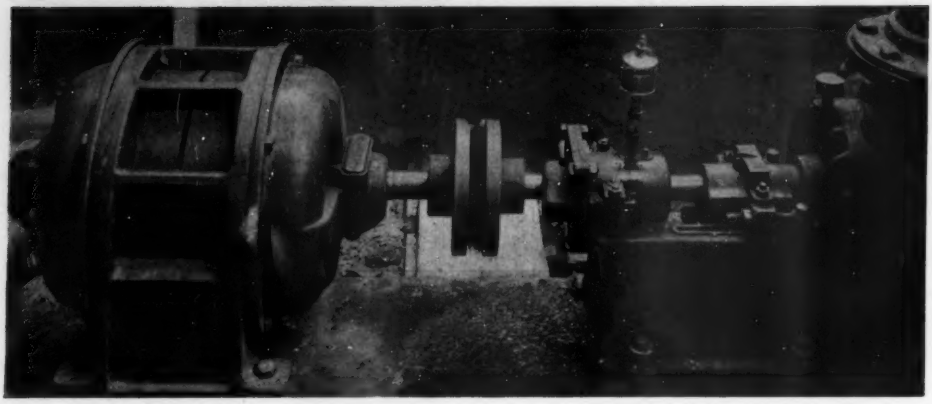
Consult your Dealer and learn about this last word in Farm Water Supply.

If there is no Dealer near you, write direct to the factory.

STA-RITE Deep Well Pump is illustrated here.

Unit Construction
Self Lubricating
Sturdy and Compact
Balanced Forces
Drip-proof Motor
Exceptionally quiet in operation
Fully Enclosed

STA-RITE PRODUCTS, Inc.
Delavan, Wis.



Electric motor which James Rianda, Gonzales, Cal., substituted for an oil engine.

MOTORS REPLACE OIL ENGINES

By C. W. GEIGER

OPERATORS of two large ranches in the Salinas Valley, California, recently discarded diesel engines and substituted electric motors to run their irrigation pumps.

H. E. Wetzell and D. M. Whiting, owners of a 165 acre fruit and vegetable tract at San Ardo, have abandoned a 100 horsepower Diesel plant and installed a 75-horsepower motor. James Rianda, veteran dairy farmer near Gonzales, has replaced a smaller sized Diesel engine with a motor of the same power.

These men had about the same reasons for changing to electric motors:

Says Mr. Wetzel:

"We used a diesel plant for a number of years and all the time we had the problem of finding and keeping men skilled enough mechanically to run it.

"The engine required attention twenty-four hours a day and had to be completely overhauled at least once a year. Even so, it frequently broke down and, because of difficulty in obtaining parts to make repairs, there were times when irrigation was impossible for long periods.

"Now we have no worries about irrigation. We simply throw a switch and our electric pump gives us perfect performance, without having to be watched. For the first time in years we are enjoying peace of mind regarding our crops."

Says Mr. Wetzell:

"My diesel engine was a lot of bother. My son was 'fighting' it all the time to get results, despite the fact that he overhauled and cleaned it every three months. He usually spent about fifteen minutes getting it started and then had to watch it continually, for there was no telling when trouble would develop. To make matters worse, the drive belt would keep slipping off the wheel and sometimes it knocked down the pipe running from the well to the irrigation canal.

"My electric motor has banished all that. And now I get more water with a 7-inch pump than I formerly got with an 8-inch engine driven pump."

Fastest, Finest! *Electric*

COW CLIPPER

Preferred the world over for its greater speed, ease of handling, rugged, lasting durability. Has 2 to 3 times as much power as other clippers of this type.

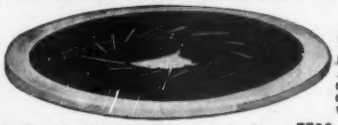
STEWART

CLIPMASTER

Exclusive Stewart design ball-bearing motor is air cooled and entirely encased in the insulated EASY-GRIP handle that is barely two inches in diameter. Completely insulated — no ground wire required. The fastest clipping, coolest running, easiest-to-use clipper for cows, horses, dogs, mules, etc. Stays sharp longer. A $25 value for $16.95 complete. Slightly higher west of Denver. 100-120 volts. Special voltages slightly higher. At your dealer's or send $1.00. Pay balance on arrival. Send for FREE catalog of Stewart electric and hand power Clipping and Shearing machines. Made and guaranteed by Chicago Flexible Shaft Company, 5524 Roosevelt Road, Chicago, Illinois. 47 years making Quality products.

What a difference!—when you put really modern top burners on your electric range . . . speed—economy—satisfaction!

CHROMALOX Super-Speed TOP BURNERS



Fit any range. Ask your power company, electrical dealer — or write us.

Edwin L. Wiegand Co. 7580 Thomas Blvd. Pittsburgh, Pa.

ASK YOUR POWER COMPANY for a DEMONSTRATION

Questions and Answers

Conducted by R. U. BLASINGAME

Converting Auto Generators

Question: *I have a six volt Ford generator and a twelve volt Dodge generator which I would like to change to 110 volt electric motors. I would appreciate your advising me just what steps to take.*

I do not mind the trouble I will have to go to as long as the cost involved is not too great.

L. J.

Answer: In order that these generators be converted to electric motors for 110 volts, complete rewinding of the fields and rotor would be necessary for satisfactory results. This would be too costly.

Mechanical changes in the commutator would be necessary.

A detailed diagram of this change would be very lengthy.

Heating Bath and Wash Water

Question: *I have a problem which I would appreciate your helping me with. We live in a rented house which has a furnace and a bath. In the winter we have a sufficient supply of hot water through the furnace. However, in the summer we have to heat all the water on our kitchen stove which runs into a considerable expense. We would like to invest in electrical equipment which could be used both in the upstairs bathroom for heating bath water and also in the basement for the washing machine. As mentioned previously, the house we live in is rented which means that we cannot afford to install permanent equipment. I might add that the water is very hard, which eliminates the possibility or at least the sensibility of the ordinary coil heaters run with kerosene.*

Would you suggest immersion equipment that might be used right in the bathtub or wash basin or washing machine to heat the water?

Any suggestion that you might make would be greatly appreciated.

A. A. R.

Answer: The portable type of immersion heater would not be satisfactory, for several reasons. First, from five to seven hours would be required

(*Continued on page* 30)

GRIND ELECTRICALLY

Grind Feed with an Electrically Driven W-W

With your low-cost electric power and a W-W Hammer Grinder you can grind and mix everything—from the heaviest roughage to small grains. Hard-to-chew stalks and stems, fodder, bundle feeds, maize heads, ear corn with shuck, etc., can be quickly converted into nutritious feed with the W-W.

Write for Full Details

Tell us what you have to grind, and how much. We'll make recommendations, send you illustrated catalog and prices—no obligation, of course.

W-W FEED GRINDER CORP.
Wichita Kansas

Free Information and Catalogs

Complete information about any equipment you are considering buying is yours for the asking.

But please give our advertisers first opportunity to answer your questions. They are particularly well equipped to serve you.

For any further information you need—use the handy coupon below—listing the applications on which you want further information.

___Animal Clippers	___Light for Plant Growth
___Better Sight Lamps	___Milk Coolers
___Bottle Washers	___Milking Machines
___Brooders	___Motors
___Bunch Tyers	___Paint Sprayers
___Burglar Alarms	___Radios
___Churns	___Ranges
___Clocks	___Range Heating Units
___Clothes Washers	___Refrigerators
___Corn Shellers	___Roasters
___Cream Separators	___Sewing Machines
___Dairy Sterilizers	___Soil Heating
___Dishwashers	___Soldering Irons
___Drills	___Spray Plants
___Ensilage Cutters	___Tea Kettles
___Feed Grinders	___Toasters
___Feed Mixers	___Threshing Machines
___Flat Irons	___Time Switches
___Floodlights	___Tool Grinders
___Food Mixers	___Ultraviolet Light
___Hay Choppers	___Vacuum Cleaners
___Hay Hoists	___Vegetable Washers
___Ice Cream Freezers	___Ventilators
___Incubators	___Water Heaters
___Insect Killers	___Water Supply
___Ironing Machines	___Water Softeners
___Irrigation Equipment	___Woodworkers

FREE INFORMATION COUPON

Electricity on the Farm
24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying. .....

My name is .....

Address .....

I get electricity from .....

..... 9-36

What's New

Reviewed by T. E. HIENTON

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request. Address your requests to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

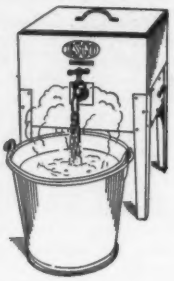
Porcelain Lighting Fixtures

Many new farm houses are being wired throughout the United States this year to receive electricity for the first time. With the wiring comes fixtures, which in many cases are given too little consideration. Fixture selection deserves as much or even more thought than the wiring itself.

A new line of porcelain lighting fixtures which will interest many farmers has been developed by an eastern manufacturer. This line of lighting fixtures is available in six different glazes: white, jet black, ivory, light green, sea green and orchid. The fixtures are washable and their colors do not change. Many of the fixtures are equipped with a convenience outlet and several with a 7-watt night light which may be operated independently of the main light.

Electric Dairy Water Heater

The tea kettle and reservoir on the kitchen range are being superseded by electric dairy water heaters for furnishing the hot water to rinse the milking machine and to clean other milking utensils. Water is being heated to 170 degrees F. from a tap temperature of 60 degrees F. by the use of one kilowatt-hour for about every three gallons.



A new non-pressure type heater of 3½ gallons capacity has been developed by an eastern manufacturer of electric dairy equipment. This heater is 14 inches square and 21 inches high and is insulated with one inch of rock wool in bottom, walls and lid. The heating element is of 1250-watts capacity for 115-volt alternating current. It requires no special wiring since the wattage is within the maximum limit allowed by the National Electrical Code for a regular circuit.

Questions and Answers

(*Continued from page 29*)

to heat the water in a washer. This may be feasible but heating the water in a bathtub would require from three to six hours. This is largely due to heat losses encountered in this type container. Second, the cost of operating this type heater would be relatively high, since it would not be possible to take advantage of the low off-peak rate.

I feel that the small cabinet heaters are not of adequate capacity to supply hot water for the household.

I would recommend a controlled heating system. This system would take advantage of the low off-peak rate and would be of adequate size. In case the party is renting, arrangements should be made with the landlord (in the lease) so that heating equipment may be removed in case the party decides to move.

CLASSIFIED ADVERTISING

LYON FLY ELECTROCUTORS kill disease-carrying pests the easiest way. A Lyon electrocutor can kill thousands of flies daily at a cost of a cent or two. Cheaper than spraying. Built for long service. Fireproof and waterproof. Send for FREE catalog describing money-saving brooders, alarms, electric material for homemade equipment. Lyon service will save you time and money. LYON ELECTRIC CO., Dept. E. F., San Diego, Calif.

WRITE FOR BROWER'S New Big Supply Catalog and Poultry Guide. Shows largest line of poultry equipment in world; over 425 items; including Electric Fountains, Brooders, Incubators, Lighting Devices. Filled with poultry information. Low prices—Big Savings—Write today. BROWER MFG. CO., Dept. N30, Quincy, Ill.

THE GRAIN BUSTER—a new type Feed Grinder—only one moving part excepting bearings—lasts longer, runs easier, delivers fresh feed faster, operates satisfactorily from 5 HP. motor. Write for descriptive folder. LINK MANUFACTURING CO., INC., Fargo, North Dakota.

The PARAGON POULTRY TIME SWITCH is scientifically designed and approved by state universities. It provides automatic control both morning and night and DIMS THE LIGHT AT NIGHT to allow the hens to return to roost. Low price and UNCONDITIONALLY GUARANTEED. Write for full information today. PARAGON ELECTRIC COMPANY, Van Buren and Dearborn Sts., Chicago, Ill.

SAFE, SANITARY ELECTRIC LAMP KILLS INSECTS AUTOMATICALLY without bait or cost where light is needed. Amazing results in garden, farm, lawn, business house, home, etc. Lifetime service. Price $2.75 up. Literature free. SAUER BROS., MFRS., 5226 E. 12th St., Oakland, Calif.

Help

A man, struggling in a doorway with a piano, was glad of the offer of assistance from a passer-by.

A fresh struggle began, and after half an hour's tugging and straining the owner of the piano remarked: "Phew! At this rate, it will take us hours to get the bloomin' thing out!"

"Out!" almost screamed the other. "Why didn't you say you want it out? I've been trying to push it in!"

No Luck—Yet

A—But surely you are not going to let your husband's insurance lapse after all this time?

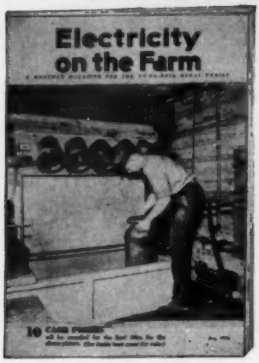
Mrs. B.—I'll say I am. I've paid on it for nine years and I ain't had no luck yet.

Schoolteacher

Several men had been out pretty late the night before, and they were comparing notes the following day. Said one: "My wife lectured me for half an hour. How did you get along with yours?"

One of the other men groaned and said, "You got off light. You don't know what it's like to be married to a schoolteacher. My wife didn't say much when I came in, but she looked me in the eye and made me sit up till I had written one hundred times on a slate the sentence, 'I must be home every night by 9 o'clock.'"

COVER TITLE CONTEST



JULY COVER

RULES
September Title Contest

Ten cash prizes will be awarded for the 10 best titles for the picture on the front cover of this magazine.

The first prize will be $20 cash, and nine second prizes of $2 in cash will be awarded.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

Titles should be brief—the shorter the better.

All members of the farm family to whom this magazine was sent may submit titles, but each contestant may submit only one title.

Question "A" must be answered.

Entries must be sent to the Title Editor, ELECTRICITY ON THE FARM, 6 North Michigan Avenue, Chicago, Illinois, before October 1st.

Winning names and titles will be announced in the November issue.

Send your title on the coupon or make out a similar form on a plain sheet of paper or government postcard.

$20 First Prize for July Contest

"Bacteria low, milk checks high,
An electric cooler is a very good buy."

MRS. M. R. MOOMAW, R.F.D. 3, Canton, Ohio

Nine $2.00 Prizes for July

"Use electricity instead of ice,
Lower the bacteria and raise the price."
WM. E. SMITH, Pineville, Penn.

"Dairy farmers will gladly attest
Electric milk cooling ALL-WAYS best."
MRS. PAUL HRUSKA, R. F. D. 1, Brunswick, Ohio

"Electricity—the dairyman's profitable silent partner."
E. M. CRONK, R.F.D. 3, Weiser, Idaho

"For quicker cooling with a better test,
Electricity serves the farmer best."
LEE GRAY, R.F.D. 1, Corinth, Miss.

"The bacteria count is practically nil
When the ice is put on the electric bill."
MRS. JOHN A. HALL, Bristol, Maine

"Putting the Chill on the cost of milk cooling."
E. A. MOTT, R.F.D. 1, Sharpsville, Penn.

"Milk cooled electrically keeps better,
Sells better and tastes better."
MRS. HELEN EATON, Ashland, Ky.

"Current methods cut cooling costs."
JOHN A. MEEHAN, R.F.D. 3, Putnam, Conn.

"Milk cooled by electric aid
Means 'A,' the proper grade."
MRS. WILLIAM BROWN, R.F.D. 4, Valparaiso, Ind.

My title for the Front Cover picture on ELECTRICITY ON THE FARM for September is

.....

.....

(a) *What electrically-operated farm shop equipment do you now own?*

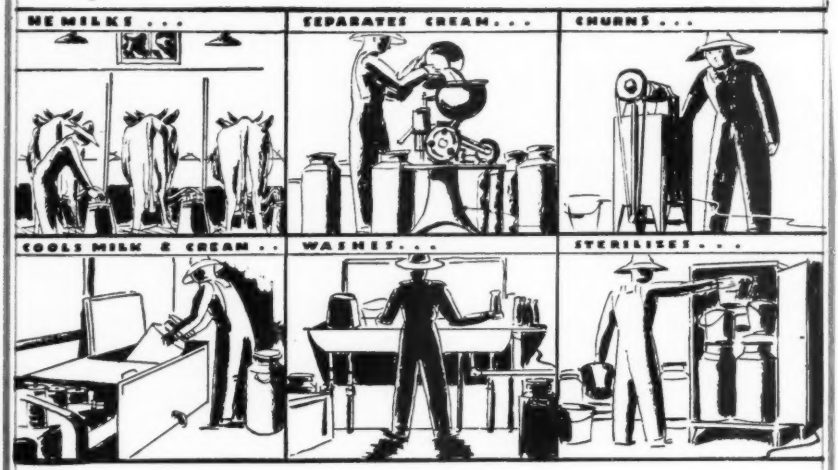
.....*Motor Driven Grinder*	.....*Electric Soldering Iron*
.....*Motor Driven Drill Press*	.....*Electric Paint Sprayer*
.....*Motor Driven Circular Saw*	.....*Electric Woodworker*
.....	.....

My name is.....*R.F.D.*.....

Post Office.....*County*.....*State*..... 9-36

ELECTRICITY

The only "Hired Man" in the world that works 24 hours a day!



Your "hired man" Electricity does just about everything possible to lighten your work, and to make your dairy business more productive. He not only saves you money—he makes money for you! Yet Electricity is the cheapest servant you can employ. The more you use, the cheaper electricity is per unit.

ASK YOUR POWER COMPANY

or your electrical equipment dealer if you need further information. Or, if you prefer, address your inquiries to ELECTRICITY ON THE FARM, *24 W. 40th St., New York, or 6 No. Michigan Ave., Chicago.*

ELECTRICITY ON THE FARM
24 West 40th Street
New York, N. Y.

Return Postage Guaranteed

Agricultural Library,
Pennsylvania State College,
State College, Pa.

Sec. 562 P. L. & R.
U. S. POSTAGE
PAID
New York, N. Y.
Permit No. 552